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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,592	09/29/2004	Shintaro Nishida	2004-1559A	5908
513	7590	08/02/2005	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P.			BOYKIN, TERRESSA M	
2033 K STREET N. W.			ART UNIT	
SUITE 800			PAPER NUMBER	
WASHINGTON, DC 20006-1021			1711	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/509,592

Applicant(s)

NISHIDA ET AL.

Examiner

Terressa M. Boykin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12-28-04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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**Priority**

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

**Claim Rejections - 35 USC § 112**

Claims 1- 23 are rejected under 35 U.S.C. 112, first paragraph, because the specification on page 1 specifically discloses that the invention is directed to an optical disk substrate having the specific "precise transferability" which are not commensurate in scope with these claims. The specification states on page 4 that this precise transferability refers to fine pits and productions formed on a stamper which can be transferred precisely when a n optical disk substrate is produced from a thermoplastic resin molding material by injection molding. However, applicant's claims are tremendously broad.

Although the CCPA has criticized the use of the characterization "too broad" or "undue breadth"....however, an application whose claim(s) are of a breadth which are not adequately supported by its specification is in violation of 35 USC 112, first paragraph. In re Borkowski et al., (CCPA 1970) 424 F2d 904; In re Wakefield, (CCPA 1970 422 F2d 897; In re Hammack, (CCPA 197)

**35 USC 112, Second Paragraph**

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 7 lacks antecedent basis since no particular grooves or pits have been previously stated or inferred.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

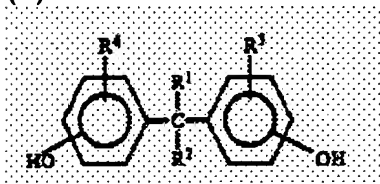
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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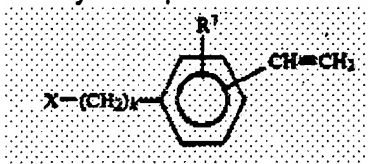
**Claim 1-6, 9-15, 17-23 -are rejected under 35 U.S.C. 102(b) as being anticipated by US 5138001 cols. 1-4 and 10-26 and tables 4 and 5.**

**US 5138001** discloses vinylphenyl compounds which gives, as a copolymer with other vinyl compound copolymerizable therewith, a crosslinked polymer excellent in birefringence, transparency, heat resistance and moisture absorption resistance. The crosslinked polymer is advantageously useful as a disk substrate. the vinylphenyl compound of the formula (I), provided by this invention, is suitable for use in the production of not only an optical disk for use in the production of not only an optical disk substrate but also optical lenses such as lenses for glasses, lenses for optical apparatus, etc., and optical organic glass products such as prism, optical fibers, etc. The thin plate formed of the crosslinked polymer of this invention can be advantageously used as an optical disk substrate.

According to this reference, the compound of the formula (I) can be produced by a reaction between a bisphenol compound of the following formula (II)



a vinyl compound of the following formula (III)



Preferred examples of the compound of the formula (II) are bis(4-hydroxyphenyl)phenylmethane, 1,1-bis(4-hydroxyphenyl)-1-phenylethane, 1,1-bis(4-hydroxyphenyl)-1-(4-methylphenyl)ethane, 1-biphenyl-1,1-bis(4-hydroxyphenyl)ethane, 1,1-bis(3-methyl-4-hydroxyphenyl)-1-phenylethane, 1-phenyl-2,2bis(4-hydroxyphenyl)propane, 1,1-bis-(4-hydroxyphenyl)-1-phenylpropane, 1,1-bis(4-hydroxyphenyl)-3-methyl-3-phenylpropane,

Examples of the compound of the formula (III) are p-chloromethylstyrene, m-chloromethylstyrene, p-bromomethylstyrene, m-bromomethylstyrene and a mixture of these; p-iodomethylstyrene, m-iodomethylstyrene and a mixture of these; p-chloroethylstyrene, m-chloroethylstyrene and a mixture of these, p-bromoethylstyrene, m-bromoethylstyrene and a mixture of these;

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p-iodoethylstyrene, m-iodoethylstyrene and a mixture of these;  
2-methyl-4-chloromethylstyrene, 3-chloromethyl-5-methylstyrene,  
3-methyl-4-chloromethylstyrene, 3-chloromethyl-4-methylstyrene,  
2-ethyl-4-chloromethylstyrene, 3-chloromethyl-5-ethylstyrene,  
3-ethyl-4-chloromethylstyrene, 3-chloromethyl-4-ethylstyrene and a mixture of these; and the like.

Examples of such a polymerizable vinyl compound are styrene and derivatives thereof such as vinyl toluene, .alpha.-methylstyrene, chlorostyrene, fluorostyrene, bromostyrene, butylstyrene, *trans-stilbene* and divinylbenzene.

The above crosslinked polymer can be advantageously produced, e.g. by cast-polymerization. That is, an intimate mixture of a polymerizable composition with an initiator is prepared, and the mixture is charged into a *polymerization mold*. After degassing, the polymerization is carried out at a predetermined temperature for a predetermined period of time. In this case, a *metal base plate* having guide grooves or pits engraved may be used as a polymerization mold, whereby the grooves or pits are replicated directly on a substrate. Otherwise, a thin plate having a predetermined thickness, which is prepared by cast-polymerization, may be formed, and then disks having a predetermined size may be cut out from the plate.

In order to decrease birefringence, especially the birefringence measured at 30.degree. incident angle of light ray while maintaining heat resistance and low hygroscopicity, it is preferable to use 30 to 65% by weight of the compound of the formula (I), 10 to 50% by weight of styrenes as the other vinyl compound and 5 to 50% by weight of a compound selected from (iso)bornyl methacrylate, (iso)bornyl acrylate, polycyclic hydrocarbon-containing compounds of the formulae (a) and (b).

The reference discloses an optical disk substrate that may be used to prepare a light guide plate prepared from the same components as claimed by applicants. The reference employs a vinylphenyl compounds addition, which give to the polymer excellent birefringence, transparency, heat resistance and moisture absorption resistance. The reference also states that the metal base plate may contain grooves or pots engraved which may be employed as a polymerization mold and replicated directed on to a substrate- transferability.

In the reference, a sample compound is measured for a mass spectrum (ms), and composition of fragment ions is determined from the observed peaks (value of m/e: m=mass of ions, e=valence of ions), whereby it is possible to assume a molecular weight of the sample compound and a bonding form of atomic groups of the molecule thereof. That is, when the sample compound has a molecular weight of M, an ion peak is observed at and Msym. position or a pseudo ion peak at an (M.+-.1)sym. position.

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Since the disclosed viscosity and molecular weight, although present in the reference, are expressed differently, they may be distinct from those claimed, thus it is incumbent upon applicant(s) to establish that they are in fact different and whether such difference is unobvious. In view of the above, there appears to be no significant difference between the reference(s) and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

### **35 USC 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 7, 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 5138001 see abstract, cols. 1-5 and tables 4 and 5 and claims.**

The reference discloses an optical disk substrate prepared from the same components as claimed by applicants except for the particle distance between the grooves or pits and optical depth thereof as well as the use of the composition to form Liquid crystal displays.

However, it would have been an obvious design choice to one having ordinary skill in the art at the time the invention was made to incorporate the substrate having the particle groove properties since the reference states that such a *metal base plate* having guide grooves or pits engraved may be used as a polymerization mold, whereby the grooves or pits are replicated directly on a substrate. Thus, the grooves or pits may be made to the design of the skilled artisan.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the optical disk substrate to form an liquid crystal display or LCD since the reference discloses the superior characteristics that would be necessary to form such an LCD and that such optical disks are commonly used in the art for such purposes.

Consequently, the claimed invention cannot be deemed as unobvious and accordingly is unpatentable.

### **Correspondence**

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

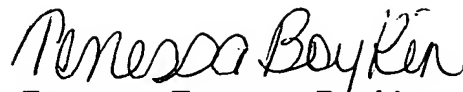
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is ( 571-272-1700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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tmb

A handwritten signature in black ink, reading "Terressa Boykin". The signature is written in a cursive, flowing style.

**Examiner Terressa Boykin**  
**Primary Examiner**  
**Art Unit 1711**